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ABSTRACT

Described are the procedures used to generate 44 competency statements regarding the job of Minnesota coordinator of special needs, a local school district level position which involves providing services to handicapped and/or disadvantaged students in vocational education. It is reported that an expert jury (which included professionals in the field of vocational and special education) was requested to submit a written list of competencies that might be required for the coordinator's job. The 44 statements which resulted are presented in table form and include that the coordinator be able to maintain a current knowledge of research, trends, and new developments in special needs programing; select and acquire instructional materials appropriate for special needs students; and secure financial aid for individual students, using alternative sources. Appended are a document summarizing a study designed to investigate job incumbents' ratings of competency statements, a paper on competency based versus performance based training, and a copy of the questionnaire used in a survey of the position and background of 33 Minnesota coordinators of special needs. (SBH)

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# COORDINATORS OF SPECIAL NEEDS PROGRAMS:

# FORTY-FOUR COMPETENCIES

Department of Educational Administration
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St. Paul, MN 55108
May, 1976

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Investigators

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COORDINATORS OF SPECIAL NEEDS PROGRAMS:

FORTY-FOUR COMPETENCIES

The competencies described in this report and the process whereby they were generated were part of the larger research and development program conducted by the Department of Educational Administration, University of Minnesota and supported in part by the United States Office of Education, Bureau of Education for the Handicapped, under terms of a grant entitled Empirical Role Definition of Local Special Needs Personnel in Vocational Education.

The larger research and development effort was designed to lay the groundwork for inservice training for persons who, at the level of the local educational agency, are responsible for programs of vocational education for handicapped and disadvantaged students. In Minnesota, this job is designated as Coordinator of Special Needs.

Other reports relating to this project and similarly dated May, 1976, include: Competencies Required of Coordinators of Special Needs in Vocational Education in Minnesota as Perceived by Incumbents (Summary); Position Description: Coordinators of Special Needs in Minnesota; Competency Ratings: Coordinators of Special Needs in Minnesota; and Recommendations: Competency-Based Inservice Training for Coordinators of Special Needs in Vocational Education.

## Position

The position of Coordinator of Special Needs in vocational education in Minnesota is probably similar to related positions in other states,

although only partial data are available (Weatherman & Krantz, 1975; Management Analysis Center, 1975; Pellegrino, 1975). The essence of the position is that an individual is given local responsibility for operating a program of special services within vocational education for students with special needs (handicapped and/or disadvantaged).

The specific population under study was the Minnesota Coordinators of Special Needs. This population had its identity established in the Minnesota State Plan for Vocational Education (Minnesota Division of Vocational-Technical Education, 1975). The population consisted of all those persons who, at the level of the local educational agency, carried responsibility for the program of services to vocational education students who were disadvantaged and/or handicapped. This program responsibility can be distinguished from the responsibility for direct services to students, i.e., for instruction. The population had operational identity in the fact that each of the persons was one with whom the State Division of Vocational Education, Special Needs Unit, maintained program communication. Thirty-three individuals met that definition in Minnesota at the time of the competency statement development reported here; they were the ones who were kept in mind as the competency statements were generated.

Three sources exist for descriptions of the Coordinator's job; the first two sources predate the present investigation, and one source is the current state Plan for Vocational Education. The 1975 Plan described the Coordinator's duties as:

> Shall prepare and implement a delivery system which addresses itself to fulfilling the unique needs of students with special needs.
>
> Shall provide the necessary support services to the student with special needs where deemed appropriate.

Shall coordinate and facilitate inservice training of regular staff to more adequately understand and meet the needs of the students with special needs.

Shall coordinate with and assist the vocational center in their service area in planning and implementing a delivery system to meet the needs of students with special needs enrolled in secondary programs.

Shall annually provide a report to the state regarding progress of the local special needs programs.

Another predating description of the job can be deduced from another report in this series (Krantz & Weatherman, 1976a). This consists of questionnaire responses by the 33 Minnesota Coordinators in which they described the context of their jobs, their programs, and their backgrounds.

A final job description is the subject of still another report in this series (Krantz & Weatherman, 1976b). In this, the incumbents rate the importance of each of the competencies to their local positions, and this description of the job (the job being described as the exercise of the competencies) can be said to consist of the performance referents of the competency statements.

## Procedures

A sequence of formal procedures was carried out in order to generate the competency statements. These procedures were intended to produce a reasonable number of descriptive statements covering competencies that might be required of individual Coordinators of Special Needs. These statements were not intended to be definitive of the positions, but rather were intended to serve as a pool of plausible statements from among which the incumbents could select and rate those competencies which were required of them in their positions.

### Selection of Expert Jury

From an advisory committee to the project for developing competency-based inservice training for Coordinators of Special Needs, five nominators

were selected: the state Coordinator of Vocational Special Needs Programs; the state Coordinator of Vocational Programs for the Handicapped; a University of Minnesota Professor of Vocational Education; the President of the State Association of Special Needs Personnel and a local Coordinator; and the Manager of Special Needs Programming in a large vocational education district. Each of these committee members was asked to individually submit a list of 10 people whom they believed to be capable of generating meaningful competency statements for this study.

From the lists that were submitted, using multiple nomination as the criterion, an expert jury was selected and asked to serve. All those who were asked agreed to do so. The expert jury was comprised of the five nominators plus the Executive Director of a private rehabilitation facility, a Professor of Educational Administration, and the Coordinator of Special Needs in a medium-sized Area Vocational Technical Institute. This group was later augmented by a project coordinator engaged in developing a statewide compatible management information system for special needs programs.

The expert jury was chosen to be, and accepted as, a group of persons knwoledgeable about special needs programming and about the requirements of the Coordinator job and of similar jobs.

Written Competency Statements

Each member of the expert jury was requested to submit a written list of competencies that might be required of a Coordinator of Special Needs. The jury members were instructed to submit as many or as few statements as seemed important to them individually. Although the topic of competencies was discussed with them, no instructions were given as to the format in which the statements were to be submitted. Each member of the jury submitted an independent list.

The submitted statements ranged widely in format and content, as is indicated by the following illustrations.

> The Coordinator of Special Needs must be able to relate to all persons regardless of race, creed, sex, or national origin.
>
> Must be knowledgeable of learning styles of students.
>
> Effectively use advisory committees.
>
> An awareness of the objectives and goals of vocational education and how they relate to preparing special needs students for occupational success.
>
> Effectively communicate with general administrators, school boards, and state agencies to insure that there is a complete understanding of the program and its relationship to the overall goals of the area vocational technical institute.
>
> Recommend or develop vocational instructors and special needs staff, curriculum materials, or teaching techniques that may be appropriate for special needs students.
>
> Can list reasons for and against a proposed change in curriculum instruction programs.
>
> Have familiarity with purchasing and accounting procedures used in a school district.
>
> The manager of special needs has the competencies to determine special needs system needs on the basis of a formal ongoing needs assessment procedure--priority of these needs should be determined on the basis of state law and philosophy, purposes and goals established for the local special education system.

The submitted lists were reduced by the investigator to an unduplicated list of approximately 135 statements.

Assembled Jury

The expert jury was convened for a full day to refine the unduplicated competency statements. The statements were presented to the jury with the content preserved but regularized into the formal of "The Coordinator of Special Needs must be able to..." The statements were written on two-by-three foot sheets of paper and posted about the meeting room.

Functioning as a group, the jury removed those items that could not be made into meaningful competency statements. They next merged together those statements that were redundent of the same content and agreed upon the wording of the merged statement. Finally, they added statements of competencies that appeared to them to have been omitted from a complete array of probable competencies. The work session ended with the determination by the jury of rules for editing the statements.

The investigator then edited the statements in accordance with the rules agreed upon by the jury. The edited list, consisting of 65 statements in the general form "The competency Coordinator of Special Needs must be able to...," was mailed to each member of the expert jury. The members were requested to mail corrections and recommendations back to the investigator.

A period of two weeks elapsed during which no significant corrections of the mailed list were proposed, then a telephone call revealed that two members of the jury were dissatisfied with some of the competencies.

The jury convened again for a half day to further refine the 65 competency statements that had been derived at the previous meeting. The working material for this session consisted of the statements, presented separately to facilitate editing. As before, the instructions were to delete, merge, or add, and this was to be done with each competency considered on its separate merits. A further instruction was to retain the competencies that might be required by some but not by all Coordinators of Special Needs. The result of this second work session was to reduce the competency statements to 44 in number. A few statements were deleted because they were of the wrong level; they encompassed several of the other statements. Still other statements were merged by the jury. Again, editing rules were determined.

The investigator then cast the statements into the edited format agreed upon and mailed them to the jurors for verification. No changes in this list were deemed necessary by the jury, and the 44 statements were taken to comprise the list to be submitted to role incumbents for rating.

Competency Statements

The competency statements were drawn up into a list arranged in an order determined by the assignment of random numbers. The list is presented as Table 1 using the same form in which it was presented to the Coordinators for rating; that is, an opening phrase is followed by a list of performance referents of the competencies.

Table 1

Competency Statements as Generated by Expert Jury

NOTE: The statements represent the jury's opinion that the given competency might well be required of a particular Coordinator of Special Needs. There is no intent to assert that each competency is required by every Coordinator, nor is there intent to assert that each Coordinator should be expected to possess a given competency at any particular level of thoroughness. These are best described as candidate competencies for rating and attribution by the incumbents--persons who should know by experience the extent to which they are actually required competencies.

THE COORDINATOR OF SPECIAL NEEDS MUST BE ABLE TO

1. ...evaluate the performance of Special Needs staff members and recommend their retention or separation.

2. ...maintain a current knowledge of research, trends, and new developments in Special Needs programming.

3. ...maintain a record system for the Special Needs program which is consistent with state regulations and format.

4. ...provide and/or secure inservice training regarding special needs, for Special Needs and regular vocational staff.

5. ...lead a multidisciplininary team meeting regarding a student with special needs.

6. ...communicate with district board(s) so that the Special Needs program is effectively understood and its purposes integrated into those of the school(s).

Table 1 (continued)

THE COORDINATOR OF SPECIAL NEEDS MUST BE ABLE TO

7. ...interview, and recommend for employment by the district, Special Needs personnel.

8. ...authorize purchases and expenditures in accordance with standard educational bookkeeping practices and in conformity with the state Department of Education's Administrative Manual.

9. ...design a system for vocational evaluation of students, using real or simulated work as the medium.

10. ...assist vocational instructors to modify their programs to meet the needs of handicapped and disadvantaged students.

11. ...develop an individualized prescriptive program plan with an individual student who has special needs.

12. ...integrate the Special Needs program into the comprehensive vocational and other agency services of the community.

13. ...effectively organize and use advisory committees.

14. ...establish formal communication channels among units within the district, and/or among component districts, regarding the operation of the Special Needs program.

15. ...acquire funding from a variety of sources to support the Special Needs Program.

16. ...establish effective means for communication and dissemination of information within the Special Needs staff.

17. ...assist students with special needs to solve problems in interpersonal relations with peers, teachers and family.

18. ...specify role descriptions and qualifications for Special Needs positions and personnel.

19. ...use styles of leadership appropriate to different situations in relation to delegation of authority, accountability and supervision.

20. ...design and implement a program evaluation process to monitor the operations of the Special Needs program.

21. ...select and acquire instructional materials that are appropriate for use by students with special needs.

22. ...design and implement a process that will identify students who may have special needs, and will determine their eligibility for Special Needs services.

Table 1 (continued)

THE COORDINATOR OF SPECIAL NEEDS MUST BE ABLE TO

23. ...develop, and integrate into district policy, Special Needs policies that are consistent with state and local requirements and with the rights of students with special needs.

24. ...insure that legally acceptable due process is followed in district actions that affect students with special needs.

25. ...make a determination of the nature of a student's needs and potentials, using referral information, interview, and measuring instruments for the assessment of the student's vocational interests, aptitudes and potentials, and learning characteristics.

26. ...mediate conflict within the staff.

27. ...plan specific modifications in vocational curriculum and methods to make them appropriate for students with special needs.

28. ...interpret and implement at the local level the guidelines and philosophy of the state Plan and of the state Unit for Special Needs, consistent with the accepted philosophy and practices of vocational education.

29. ...carry out effective public relations with various audiences on behalf of the Special Needs program, using both oral and written formats.

30. ...assist a student with special needs to take an active part in the planning of his educational placement and vocational program.

31. ...supervise the activities of Special Needs professional personnel.

32. ...coordinate student transportation with component school districts.

33. ...design and conduct a follow-up study of students with special needs.

34. ...provide vocational counseling and guidance to student with special needs.

35. ...design a student evaluation that will indicate student progress in a vocational program.

36. ...identify, plan, and recommend facility (physical plant) requirements of the Special Needs program within the district.

37. ...secure financial aid for individual students, using alternative sources.

38. ...comply with state and federal laws, regulations, and guidelines, interpreting them and reporting so as to show that all criteria are met for Special Needs program approval and funding.

Table 1 (continued)

THE COORDINATOR OF SPECIAL NEEDS MUST BE ABLE TO

39. ...design and implement a formal needs assessment process to determine the necessary size and type of Special Needs program.

40. ...develop and maintain a Special Needs budget that appropriately accounts for funds from several sources.

41. ...prepare students with special needs to effectively use community resources and agencies to meet their long term needs after they leave the school.

42. ...assist an employer in developing an affirmative action plan for employment of handicapped persons, and/or in securing a Wages and Hours certificate for less than minimum wage.

43. ...provide remedial and developmental instruction in basic skills, such as reading and math, to students with special needs.

44. ...apply basic learning theory and principles of behavior management to the design of instructional programs for individual students with special needs.

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## Method Recapitulation

The competency statements described in this report were generated by an expert jury. This method was used in the absence of a thorough preexisting job description from which competency statements could be deduced.

The jury was first selected in two stages to maximize the probability that its members comprised a truly expert group. The process itself involved both independent initiation of statements in writing and group process refinement in order to pool expertise. The services of coordination, the moderating of group discussions and editing were provided by the investigators. The editor and moderator did not contribute any statements or delete any material statement content.

## Discussion

The foregoing description has been given in more detail than is usual because the literature on competency determination frequently glosses over this step. Several points are worthy of particular notice.

Source of Expertise

A jury of experts was selected from among those who would most reasonably have a valid opinion on the competencies needed by Coordinators of Special Needs. Four general classes of agency were drawn upon for experts: the state regulatory agency, representing a fairly authoritative responsibility; the state university, representing a scholarly view and expertise in personnel preparation; the field under consideration, including persons who function in the coordinator role; and private sector human services of a related type.

It was believed that a small group of highly expert persons participating throughout the process of generating the competency statements would be able to create a pool of reasonable items. Subsequent events seem to have borne out this expectation.

Number and Level

The list of 44 statements was of reasonable length; it neither represented a finely divided and exhaustive set of operations nor a brief list of major areas of responsibility. Inspection of the list will show that most statements represent a definable but not detailed task that may be faced by a Coordinator.

It was the explicit intent of the jury to produce a list at a single level; that is, the jury rejected very broad categories (such as "personnel management" or "program supervision"), and it also rejected small subtasks. The jury proposed to create competency statements none of which subsumed any of the others, but which each subsumed details. Inspection of the list seems to show that the jury was successful in producing statements at approximately a single level of complexity.

Completeness

Other than by intent of the jury, it is not possible to tell from this investigation whether the presented list is exhaustive. There may well be an undertermined number of competencies required by one or all Coordinators in Minnesota, but this investigation has no means for determining whether such is the case.

Format

The competency statements were cast in the general form of "able to do X." The reason behind this is detailed in Appendix B of this report.

Briefly, the intent was to produce statements of a hypothetical construct called competency. This approach was chosen over the approach of (literal) performance-based education in order allow later flexibility in the development of training programs and achievement instrumentation. In a competency-based approach, it is reasonable to measure a trainee's acquisition of skill and knowledge as well as to simulate or observe performance. In a literal performance-based approach where no construct called competency is attributed to the trainee, only the performance itself can reasonably be observed and measured. The proposition is discussed in greater detail in Appendix B.

Candidate Nature of Statements

The list of competency statements is a candidate list. The jury developing the statements was specifically instructed to retain statements that might not be required of every Coordinator. The list, as given in this report, must not be considered a list of competencies actually required by Coordinators of Special Needs in Minnesota. Determining whether a given statement represents a competency that is actually required was subsequently checked by a second stage of the investigation, the rating by incumbent Coordinators of the competencies' importance on the job. Beyond this, a fully responsible

verification of whether the competencies are actually required would make it necessary for the Coordinators' supervisors to state whether they require the competencies of their Coordinators, perhaps a second outside verification by the agency which regulates the activity from the state level, and a deductive analysis of competencies carried out subsequent to a thorough job analysis.

Only the rating by the incumbents was carried out in this investigation. It is reported in a companion report of this series, Competency Ratings: Coordinators of Special Needs in Minnesota (Krantz & Weatherman, 1976a).

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# APPENDIX A

# COMPETENCIES REQUIRED OF COORDINATORS OF SPECIAL NEEDS IN VOCATIONAL EDUCATION IN MINNESOTA AS PERCEIVED BY INCUMBENTS

## (Summary)

This summarizes the procedures and findings of an investigation conducted by the Department of Educational Administration, University of Minnesota, and supported in part by the U.S. Bureau of Education for the Handicapped, An Empirical Role Definition of Local Special Needs Personnel in Vocational Education.

## BACKGROUND

This study was carried out as part of a programmatic research and development effort. That effort is the development of inservice training for persons who at the local educational agency level are responsible for programs of vocational education for handicapped and disadvantaged students. In Minnesota, this job is designated as Coordinator of Special Needs.

The Department of Educational Administration conducts inservice training for directors of special education. The present investigation was suggested by some of the developments in that program. Other activities have included a survey of special needs personnel in the various state divisions of vocational education and a survey of local special needs programs in the various states.

## PURPOSE OF STUDY

The purpose of the present investigation was to delineate the nature of the job of Coordinator of Special Needs in Minnesota, and to determine what competencies are perceived by the incumbents to be required by that job.

The study investigated the following:

1. Characteristics of the organizational context of the job, nature of the program supervised, and background and professional orientation of the incumbents.

2. Competencies required on the job as perceived by the incumbents, and,

3. Whether, in their perceptions of their competency requirements, the Minnesota Coordinators of Special Needs constitute an indistinguishable single population or whether they are made up of distinguishable subpopulations.

Available information indicated that the job would be diverse and that the incumbents would be varied in background and orientation.

## RELATED INFORMATION

Special Needs programming in vocational education (service to students who are handicapped and/or disadvantaged) has attained high visibility, and

its lead personnel are the subject of considerable interest. The job of Coordinator of Special Needs, to which is allocated the responsibility of special needs programs at the local level, has emerged as pivotal in the enterprise. The job is defined in general terms in the Minnesota State Plan for vocational education, but neither in Minnesota nor elsewhere was there found a statement of what competencies are required by the job.

The competencies of educational personnel have likewise become the subjects of extensive literature. The competency based movement is relatively recent, with most of its literature appearing in the 1970's. The competencies approach has become the most common one in the design of new training programs for educational personnel.

A state by state search has not revealed the existence of a preservice or inservice training program designed for Coordinators of Special Needs. Rate of entry into the job appears to be rapid and the incumbents appear to have been variously recruited. The specific facts regarding this, however, had not been previously ascertained.

## DESIGN OF THE STUDY

Population The population studied consisted of all 33 present Coordinators of Special Needs in Minnesota.

Competency statements A jury of experts was assembled to generate competency statements. The jury consisted of: the state Coordinator of Vocational Special Needs Programs; the state Coordinator of Vocational Programs for the Handicapped; a University of Minnesota professor of vocational education; the president of the state association of special needs personnel, the secretary of the association, and another local special needs coordinator; a University of Minnesota professor of educational administration; the director of a private rehabilitation facility; and a consultant engaged in developing a statewide information system for special needs. The jury members individually submitted competency statements and then met for a full day and an additional half-day to refine and collate the statements. The result was a list of 44 competency statements.

Position description A questionnaire was developed for generating information about the organizational context, the program characteristics, and the coordinator preparation and orientation. This questionnaire was submitted to the 33 coordinators in Minnesota, with 100% return.

Competency rating The 44 competency statements were presented to the Coordinators with the request to check each competency as being either Not Needed, Useful, Important, or Essential to the conduct of the job. Returns were received from every coordinator.

Analysis The returns were statistically checked for patterns that might indicate reliability of the instruments. The characteristics as revealed on the position questionnaire and the ratings of the competencies were tabulated. Finally, 17 competencies were checked against 7 characteristics of the positions and of the incumbents to determine whether the competency ratings were those of a single population or of distinguishable subpopulations.

## FINDINGS

Instrument reliability To the limited extent that verification was possible, the instruments appeared to be operating with reasonable reliability.

Organizational variables Geographic location was found to be roughly proportionate among central city, urban/rural, and rural. Most incumbents were found in Area Vocational-Technical Institutes operated by single school districts, and most were under the immediate direction of the school director. Most of the incumbents had job titles similar to that of coordinator and over two-thirds of the jobs had been established within the past two calendar years.

Program variables Most programs were neither completely integrated nor completely segregated. In size they ranged from ten to more than 300 students. Age levels served ranged from junior high to adults over age 21. Types of student need were reported equivocally. The coordinators reported supervising personnel ranging in number from zero (five programs) to over 20 (six programs).

Incumbent variables Most of the incumbents reported academic degrees of Masters level or beyond. Most of them had had at least 9 quarter credits of training in general education, vocational trade and industrial education, special education, and educational administration. Most had been employed in vocational education in the past. Most of them had taught in general education and over a third of them had taught in special education. Nearly two-thirds were members of the American Vocational Association and more than half were members of the National Association of Vocational Eduation Special Needs Personnel.

Competency ratings Most of the 44 competencies were rated by the Coordinators as being at least Important if not Essential. On the other hand, at least one coordinator reported each of 39 competencies to be not needed at all in his situation; only five competencies had no ratings of Not Needed. The most common rating of the competencies was Essential.

Contingencies A total of 17 competencies were selected to be matched against 7 variables from the position questionnaire. The proposition to be tested was that variables on the position questionnaire could be used to divide the responding population into groups who would rate the competencies differently. Of the 119 comparison, 4 were found to be statistically significant at the .05 level. This finding does not allow a practical division of the population into groups; for practical purposes, they may be considered as a single, but diverse, population.

## CONCLUSIONS AND RECOMMENDATIONS

Reliability of information The information in general was considered to be adequately reliable for this early stage in the development of a training program.

Population unity Useful subpopulations among Minnesota Coordinators of Special Needs were not discriminated by this study. The population is best treated as unitary and the positions are best considered to be variants of the same job. Within that same job, there is much diversity and training approaches should be individualized.

Competency patterns Perceptions of competency needs lacked unanimity; however, the clear majority of coordinators considered most competencies on the list to be at least Important. The conclusion is that the expert jury was successful in generating competency statements that were reasonably compatible with the job of coordinator. Some of the ratings lead to the conclusion that some of the coordinators are not yet familiar with all of the requirements of their jobs.

The job The job of Coordinator of Special Needs is emergent and not yet fully defined. It consists of a new general class of personnel in vocational education, the first middle managers who are not trade-specific. The job has multidisciplinary affinities, with roots in at least vocational education, special education, and vocational rehabilitation, as was evident in the competency ratings and in the incumbents' backgrounds.

Recommendations to the field It is recommended that the state education agency and the incumbent coordinators engage in continued clarification of the nature of the coordinator job. The diversity of program and job context should not be unnecessarily discouraged. Neither should there be suppression of the diversity in incumbent background and orientation at this stage in the field's development.

Recommendations for training The general research and development plan of which this study was an early segment was confirmed in its immediate succeeding stages:

1. It is recommended that there be developed an individualized, modular, competency based inservice training program for Coordinators of Special Needs.

2. It is recommended that investigation be made of the applicability of this study's findings and recommendations to other states.

3. Since the position is in many respects analogous to that of the director of special education, consideration should be given to using the already developed training program for special education directors where applicable.

4. It is recommended that a determination be made of actual competency requirements of the job as well as the presently reported incumbent perceptions of competency need.

5. Finally, the competency list used in this study is affirmed to be an appropriate one and is recommended for further refinement, such as the division into administrative and service competencies and a free sort to develop a taxonomy of competencies.

Richard Weatherman,
Project Director

Gordon Krantz,
Project Coordinator

4/12/76

APPENDIX B

# COMPETENCY BASED VERSUS PERFORMANCE BASED TRAINING: A WORKING PAPER

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1976
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The literature on competency based and performance based training in the field of education does not distinguish very well between competency and performance. In fact, one finds statements like "CBE (competency based education) and PBE (performance based education) refer to the same movement and will be used interchangeably in this volume" (Houston, 1974).

In ordinary English, however, performance is what a person does and competency is the ability which accounts for his being able to do it. There is something eminently sound about respecting common English usage when one is speaking English, and something eminently corrosive to long term communication in deliberately using words in a manner that contradicts their common meaning. The movement known as competency based training and/or performance based training is overdue for setting its semantic house in order. The strategy for producing competencies is sufficiently different from the strategy for enhancing performance so that confusion is bound to impair the effectiveness of the effort.

The proposition to be stated here is that quite different sets of ideas and procedures are involved in the designs of competency based training and performance based training.

First of all, the subject under discussion is training and not education. Education is a worthy goal and one which is broader in its scope and intent than is training. The purpose of training is focussed upon a specific range of activities and responsibilities, typically those of an occupation.

Returning to the distinction between competency based and performance based training, it may be well to outline each of these as ideational structures, each with an associated set of rationally permissible procedures.

The purpose of each is to enhance program achievement through enhanced performance of the program operator, the person who carries out functions which will effect the program. Further, both performance based and competency based training use training as their means for attaining this general goal. The difference lies in how attainment of the general goal is thought to be mediated into performance.

By definition, competency based training purports to mediate its results through the building or enhancement of competencies. The ideational structure of this mediation as it seems to be commonly discussed is shown in Figure 1.

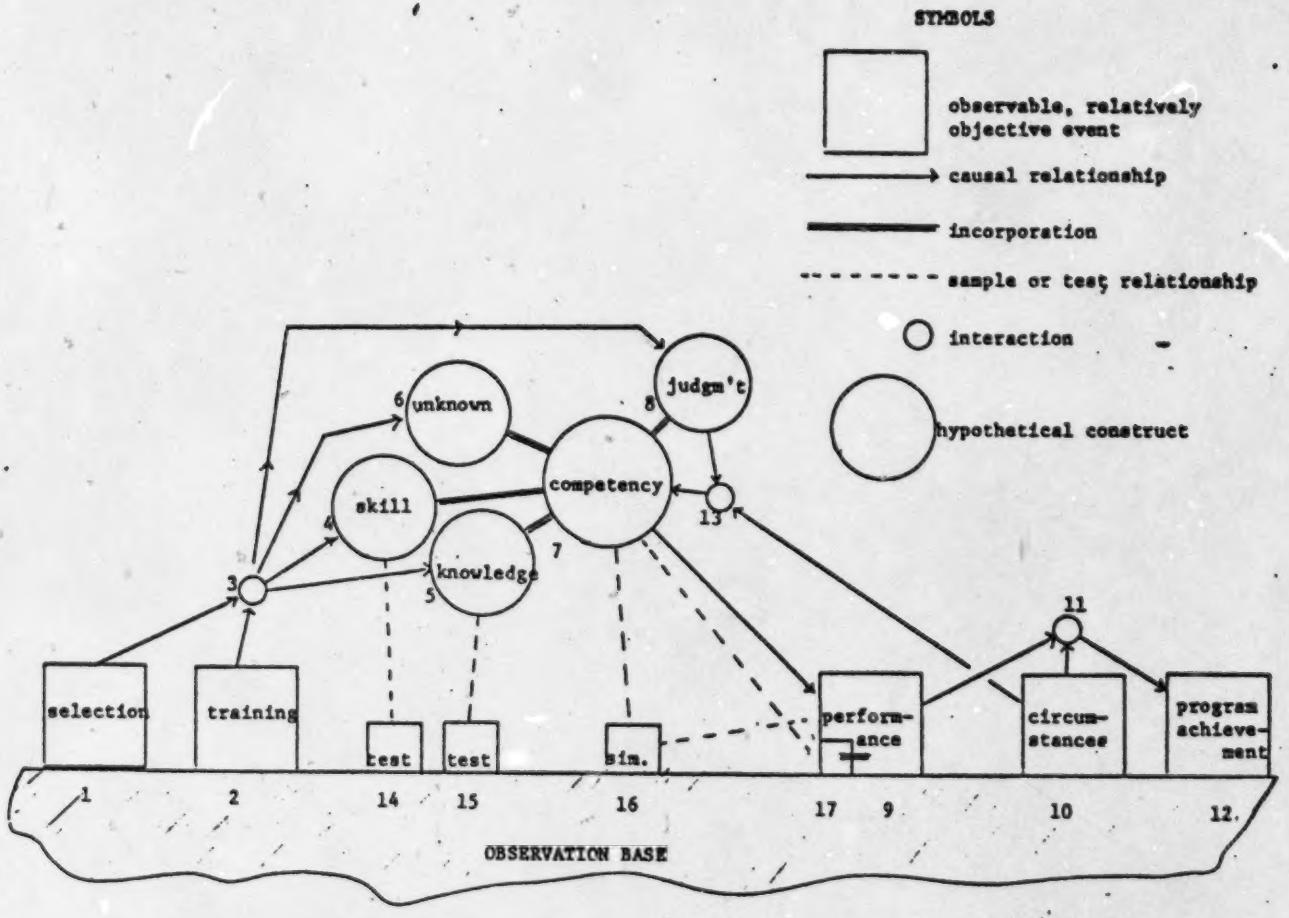


Figure A-1
Constructual relationships in competency based training.

It is immediately apparent from Figure 1 that certain things are directly in touch with the observation base and constitute observable, relatively objective events. These are the operations that can be observed, described with some objectivity, counted, tallied, and measured. Other parts of the schema are said to exist, but they cannot be directly observed; they are inferred from observing events on the observation base. They are, to use the terminology long established in the philosophy of science, hypothetical constructs (MacCorquodale and Meehl, 1948). The structure of competency based training can be walked through as follows:

1. Selection of the trainees is of variable complexity, but it can be described in terms of selection criteria or in terms of the events which bring into being the population to be given training. The description of selection includes certain objective personal characteristics as well as the other items that go into personnel selection or organizational evolution. One way or another, a particular group of people with particular group characteristics preexists.

2. Training experiences, again of a fairly describable form and therefore grounded on the observation base, are provided. This is usually the primary manipulandum of a training program, whether competency based or performance based. The training participates in an

3. interaction with the trainees' personal characteristics as derived from selection. The nature of this interaction may be but need not be specified. It results in the trainees' acquisition of several internal characteristics:

4. Skill of some kind is said to be acquired. The trainee becomes adept at something. In addition,

5. knowledge is acquired by the trainee. This is the easiest part of the operation to attach to measurement instruments as well as to target by the content of the training. In addition to skill and knowledge,

6. unknown other acquisitions and changes accrue to the trainee as the result of interaction between his selection and training. Something that is made up of some unknown variance in addition to skill and knowledge, called

7. competency, is acquired by the trainee. This is the primary hypothetical construct of the schema and is sometimes said to include the other constructs to which it is connected by double lines in Figure 1. According to the logic of competency based training, it is this competency (ability to do something or some capability) that is the concern of the trainer. Competency is something that the trainee has or does not have and has in some amount. It has a certain "thingy" quality to it and may be thought of as something in the person that explains why he is able to

perform in particular ways and at particular levels of effectiveness. Like all hypothetical constructs, competency is not observable but it is inferred from certain observations and in order to explain relationships to which it is ideationally linked. It probably, for purposes of the present discussion, should be considered to include another element,

8. judgment, a quality derived from the trainee's personal characteristics and perhaps also enhanced by his training.

In any event, it is the person's competency which is said to explain his capability for

9. performance on the job. At this point one is back to the observation base and discussing a set of events which can be observed fairly directly. Performance consists, in the present sphere of discussion, in carrying out the duties of the job. Each aspect of performance is linked rather strongly to a specific competency in that one usually speaks of competency to carry out particular performances. The performance is carried out in the

10. circumstances in which the person works. These circumstances are also relatively objective and reportable. Together with the individual's performance, these circumstances result in an

11. interaction which is said to produce

12. program achievement. It is for the purpose of having program achievement of proper direction and amount that society becomes interested in the entire endeavor of competency based training. (It is typical for society rather than the trainee to bear the cost of competency based training.)

Meanwhile, the performance of the trainee is not expected to be indiscriminate. Rather it is modified through the competency, and takes into account the individual circumstances by means of an

13. interaction with judgment. Further, this judgment is probably enhanced by repeated exercise as well as by the characteristics and experiences of the trainee.

There are several places in this schema where instrumentation may be and usually is applied. Many of the instruments are intended to measure the hypothetical constructs. The skill presumed to be enhanced by the training is sampled by means of a

14. test. This is generally on the model of the trade test in which more than information is measured. Knowledge, on the other hand, is measured by a

15. test of information. This is the easiest of the instruments to design and requires that the trainee be able to discriminate or recall items of information. This kind of test is more unidimensional than is a

16. simulation, which is a test assumed to measure the competency in more global terms. The simulation in fact may be taken as an abstraction or even equivalent of some sample of performance. On the other hand, it is also possible to

17. sample performance by observing some portion of the trainee's actual output subsequent to the training.

The whole schema of competency based training is thus seen as a structure of ideas that necessarily include hypothetical constructs. These constructs are some sort of thing-in-the-person and they explain why the training results in performance. Instrumentation is possible at at least four points: test of skill, test of knowledge, simulation, and sample of actual performance. The relationship network which links the structure together is shown by the lines on Figure 1, joining the constructs and events into a series of lawful relationships. For this reason it may be termed a nomological net (Meehl, 1958). If the relationships were found to be unlawful, that is irrational, the constructual system would be rejected as irrational. They are judged by the adherents of competency based training to be lawful, to the extent that they give thought to the subject.

The lawful relationships in performance based training, as are shown in Figure 2, are schematically more simple. Performance based training, taken literally, does not invoke any hypothetical constructs, any explanatory things-in-the-person. It does not necessarily deny the existence of such things-in-the-person, but it does require them as explanatory qualities.

Performance based training, stripped of those things that are not ideationally necessary, involves only the following operations:

1. Selection or specification of the trainee's characteristics is the same as in competency based training. Similarly,

2. training may have exactly the same content, though it is not necessarily the same. The trainee characteristics and the training interact through some kind of

3. intervening mathematical variables. These variables are simply a mathematical description of the relationship between selection and training on the one hand and the outcome performance on the other, without trying to specify what is inside the "black box" of the person to mediate the results. All that this model says is that the selection and training have the outcome of

4. performance, again defined as the carrying out of job functions. This is somewhat less a statement of faith than is the similar statement under the other schema that performance is caused by competencies. The only claimed causal relationship in performance based training is that somehow the training (and selection) can be shown to be contingent with performance. This is an empirically testable matter. As before, performance is related to the

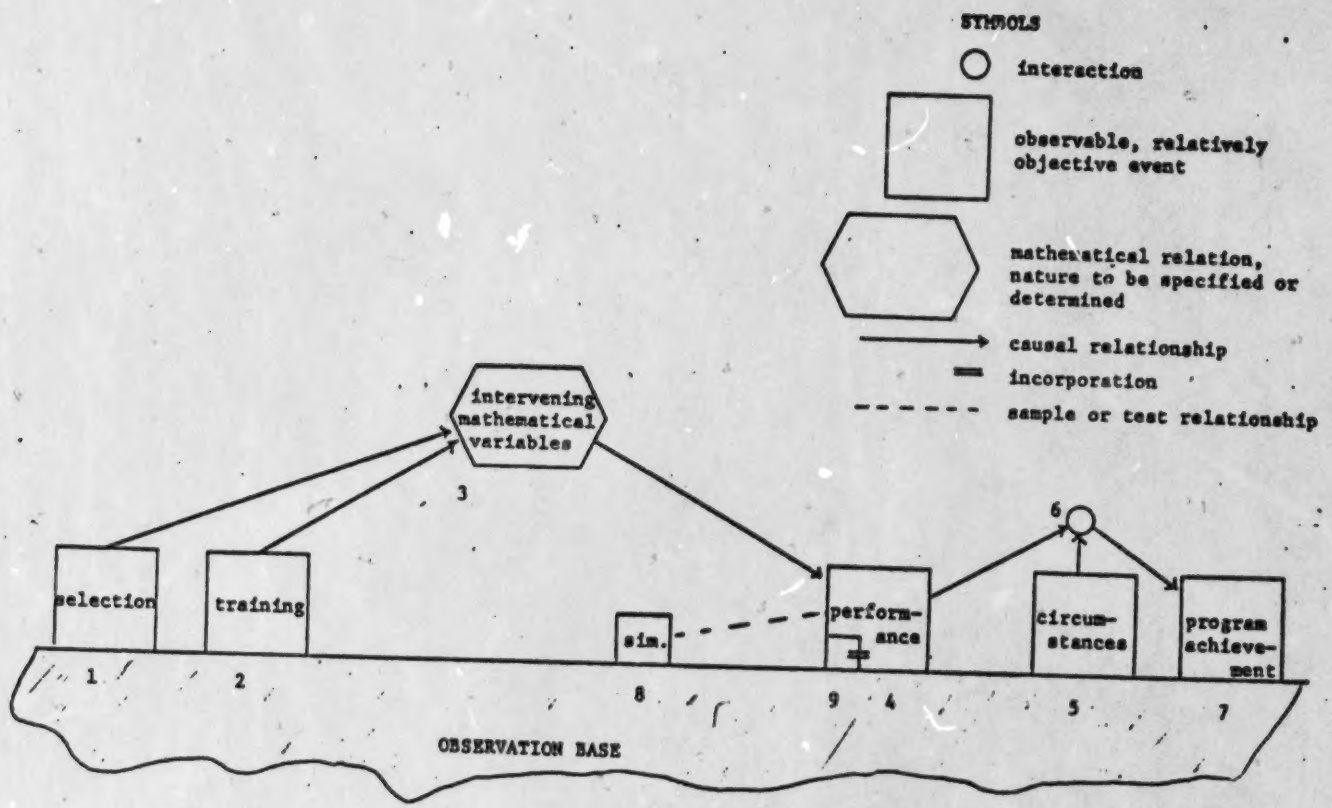


Figure A-2

Relationships in performance based training.

5. circumstances of the job. As before, these circumstances and the individual's performance enter into an

6. interaction which eventuates in

7. program achievement. As before, it is this program achievement which causes society to invest in performance based training.

8. Simulation is one of the few allowable instrumentations in a performance based training logic. Since no skill, knowledge, or competency is imputed to the trainee, there is no logical point in testing for these things. Rather, an approximation of performance is set up under circumstances which duplicate a number of performance elements and this is known as simulation. Alternatively, a

9. sample of the performance itself may be observed and this is the other logically permissible measurement of training results.

In performance based training, in its pure form, all of the events and operations take place on the observation base and can be observed. The training and performance are connected through intervening variables which are mathematical or relation-descriptive in nature. In competency based training, on the other hand, something called competency is said to reside in the person's characteristics and to mediate between training and performance. The competencies are hypothetical constructs and have explanatory qualities.

This contrast is, of course, between competency based and performance based training in relatively pure form. However, each formulation is a statement of belief about the way things are in the real world and hence a distinction needs to be made between the two formulations. It would be irrational to test for skill and knowledge in a performance based training program. It would be careless, but perhaps not irrational, to fail to specify the relationships among the hypothetical constructs in a competency based program. It would be of questionable rationality to test for skill and knowledge in a competency based program without specifying how these things mediate training and performance.

There is no particular reason why "the movement" needs to choose one model or the other at this time. However, there is good reason indeed to distinguish between the models when discussing training programs in order to avoid confusion and garbled communication. No field of endeavor is particularly benefitted by either irrationality or confusion.

If the internal logic of the chosen schema is respected, then there is presently not much except taste to dictate the choice of schemata. In the long run, however, there is a criterion by which the choice can be made unless it is rendered moot by the collapse of the PBT/CBT movement. The criterion is in the empirical question: Is it more useful to conceptualize competencies or is it more useful to invoke nothing beyond intervening variables? The question can only be answered by rigorous thought, followed by rigorous observation.

## REFERENCES


1. Houston, W. Robert. Exploring Competency Based Education. McCutchan Publishing Corp, Berkeley, 1974.

2. MacCorquodale, K. and Meehl, P. "On a Distinction Between Hypothetical Constructs and Intervening Variables," Psychol. Rev. 55:95-107, 1948.

3. Meehl, P. Lectures, University of Minnesota, 1958.

MINNESOTA SPECIAL NEEDS

LEAD PERSONNEL

ID: 1 (1) (2,3,4) (5)

1. JOB TITLE - Please check the box at the right which follows the ONE statement which is closest to the title by which your job is known in your district's personnel list. Need not correspond to your state certificate. (6)

| | |
|---|---|
| Special Needs Coordinator | 1 |
| Support Services Manager | 2 |
| Program Manager | 3 |
| Director of Special Services | 4 |
| Case Services Manager | 5 |
| Other | 6 |

2. IN ADDITION to answering the first question, please write on the line below the title by which your job is listed in your district's personnel list.

_____

3. Do you think that your job should have a different title? If so, please write on the line below what you think it should be:

_____

4. To whom are you directly responsible in the conduct of your job? Please check the box at the right following the title which is closest to the title of the person to whom you report directly. (7)

| | |
|---|---|
| Superintendent of a district | 1 |
| Director of a school or AVTI | 2 |
| Department head | 3 |
| Director of Special Education | 4 |
| Special Needs Coordinator | 5 |
| Other (write in) _____ | 6 |
| More than one of the above | 7 |

5. Name and title of your immediate supervisor.

_____

NOTE: Right-margin numbers are for keypunch use.

6. For whose work, besides your own, are you responsible? In the blank following each title, write in the NUMBER of such persons for whose work you carry professional or supervisory responsibility. Count a part time person as ONE. Where the answer is zero, write in "0."

Teacher(s) supervised by you . . . . . _____(8, 9)

Support Services Manager(s) . . . . . _____(10,11)

Case Services Manager(s) . . . . . _____(12,13)

Secretary(ies) or other clerical supervised by you . . . . . _____(14,15)

Vocational Evaluator(s), Work Evaluator(s) . . . . . _____(16,17)

Aide(s) for whose work you are responsible . . . . . _____(18,19)

Other (specify) _____ _____(20,21)

Other (specify) _____ _____(22,23)

7. LOCATION - Please check the box at the right which follows the one best description of the PRIMARY area served by your program. (24)

central city only, population over 50,000, of a metropolitan area . . . . . ☐ 1

suburbs only, of a city with population over 50,000 . . . . . ☐ 2

central city, population over 50,000, AND its suburbs . . . . . ☐ 3

urban/rural, including city or cities of population 10,000 to 30,000 . . . . . ☐ 4

mostly rural, may include urban areas under population 10,000 . ☐ 5

other, DEFINE below: . . . . . ☐ 6

8. ORGANIZATION - Please check the box at the right which follows the ONE best description of the kind of organization to which you are responsible in the administration of your program of services to students with special needs in vocational education.

(25)

| | |
|---|---|
| a single, local school district which operates a COMPREHENSIVE educational system, including elementary schools; may also operate a vocational-technical school and/or community college; may offer vocational service to residents of other districts . . . . . | ☐ 1 |
| a local school district organized PRIMARILY FOR VOCATIONAL EDUCATION; may cover same area as more than one local general education school district, may be a Joint Powers Board. . . . . | ☐ 2 |
| a special post-secondary district which is NOT primarily organized for vocational education; an illustration would be a junior college or community college district which is governed by a specific area within the state and which may also provide vocational education service . . . . . | ☐ 3 |
| an intermediate unit or Joint Powers Board providing a number of educational services; NOT PRIMARILY organized for vocational education . . . . . | ☐ 4 |
| other, DEFINE below: . . . . . | ☐ 5 |

9. Please enter the total operating budget amount for your special needs program only during the current fiscal year, rounded to the nearest thousand.

$___,___,___,0\,0\,0$ (26-29)

(26 27 28 29)

10. SEPARATENESS - Please check the box at the right following the statement that best describes where your special needs program operates in relation to the standard vocational education program.

(30)

| | |
|---|---|
| special needs program operated in a separate center, physically separate from other programs of vocational education or general education . . . . | ☐ 1 |
| special needs program operated as an INTEGRAL part of the standard vocational education program of your administrative organization, no separate special needs areas for students (may have special offices for staff) . . . . . | ☐ 2 |
| special needs program neither completely separate nor fully integrated . | ☐ 3 |

11. Is any part of your special needs program provided to students in a non-school public facility such as a sheltered workshop or rehabilitation center, AND the fee paid by the public school, not by vocational rehabilitation? (31)

Yes ☐ 1

No ☐ 2

12. AGE LEVELS - Please enter in the blanks the approximate percentage of the SPECIAL NEEDS students who are at the following levels in your program. Round to the nearest whole number (such as "12%"); must total to 100%.

elementary . . . . . ____% (32-34)

junior high or grades 7, 8, 9 . . . . . ____% (35-37)

senior high or grades 10, 11, 12 . . . . . ____% (38-40)

post secondary to age 21 . . . . . ____% (41-43)

adult over age 21 . . . . . ____% (44-46)

TOTAL 100 %

13. What is the approximate number of students who are in either average daily attendance or average daily membership in your SPECIAL NEEDS PROGRAM? . . . . . ____ (47-50)

(47 48 49 50)

2
(1) (2,3,4) (5)

14. NEED TYPES - Please enter in the blanks the approximate percentages of students in your SPECIAL NEEDS program who have the stated cause-characteristics of special needs. Please round to the nearest whole number (such as "12%"); must total 100%.

| | | |
|---|---|---|
| handicapped only | ____% | (6-8) |
| disadvantaged only | ____% | (9-11) |
| students who have both handicap and disadvantage | ____% | (12-14) |
| students who are not identified as either handicapped or disadvantaged | ____% | (15-17) |
| TOTAL | 100 % | |

The following questions relate to your experiences and viewpoints. Please do not hesitate to give frank opinions.

15. Please check the box or boxes at the right following ALL of the jobs at which you have been employed in the past for eight months or more:

| | | |
|---|---|---|
| Teacher in vocational education | ☐ | 1,2 (18) |
| Vocational education counselor | ☐ | 1,2 (19) |
| Teacher-coordinator, vocational education | ☐ | 1,2 (20) |
| Case services or support services manager | ☐ | 1,2 (21) |
| Teacher in special education | ☐ | 1,2 (22) |
| Director or supervisor of special education | ☐ | 1,2 (23) |
| School psychologist | ☐ | 1,2 (24) |
| Rehabilitation counselor, state employee | ☐ | 1,2 (25) |
| Vocational adjustment coordinator, school/DVR | ☐ | 1,2 (26) |
| Teacher in general education | ☐ | 1,2 (27) |
| School counselor, general education | ☐ | 1,2 (28) |

16. What was the title of the professional job which you held immediately before the job you now hold?

_____ ____ (29)

17. Please check the boxes at the right which follow ALL of the professional organizations to which you currently belong.

| | | |
|---|---|---|
| American Vocational Association | ☐ | 1,2 (30) |
| Council on Exceptional Children | ☐ | 1,2 (31) |
| National Rehabilitation Association | ☐ | 1,2 (32) |
| American Personnel and Guidance Association | ☐ | 1,2 (33) |
| Assn. Admin. of Special Education | ☐ | 1,2 (34) |
| HAVESHP | ☐ | 1,2 (35) |

18. What is your present level of academic preparation? Please check the highest that applies to you: (36)

| | | |
|---|---|---|
| BA or BS | ☐ | 1 |
| BA or BS plus 45 quarter credits | ☐ | 2 |
| MA or MS | ☐ | 3 |
| MA or MS plus 45 quarter credits | ☐ | 4 |
| Educational Specialist | ☐ | 5 |
| PhD or EdD | ☐ | 6 |

19. Please check, below, ALL of the areas in which you have had at least 9 quarter credits (6 semester credits) of undergraduate or graduate courses:

| | | |
|---|---|---|
| General education | ☐ | 1,2 (37) |
| Vocational, and Trade and Industrial | ☐ | 1,2 (38) |
| Special education | ☐ | 1,2 (39) |
| Vocational rehabilitation | ☐ | 1,2 (40) |
| Educational administration, program management | ☐ | 1,2 (41) |
| Business administration | ☐ | 1,2 (42) |

20. Since you have been in your present position, for what ONE aspect of your job did you find yourself to be best prepared?

21. For what ONE aspect of your job did you find yourself to be least well prepared?

Thank you! Please return to:

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